



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/549,593	09/19/2005	Katsuhiro Fujimoto	1830.1012	1090		
21171	7590	04/28/2008	EXAMINER			
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				LEE, DORIS L		
ART UNIT		PAPER NUMBER				
4145						
MAIL DATE		DELIVERY MODE				
04/28/2008		PAPER				

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/549,593	FUJIMOTO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Doris L. Lee	4145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-25 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-25 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>See Continuation Sheet</u> .	6) <input type="checkbox"/> Other: ____ .

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :20050919, 20070109, 20070119, 20080206.

## DETAILED ACTION

### ***Claim Objections***

1. **Claim 1** is objected to because of the following informalities: the limitation "together with a combination of" renders the claim unclear whether the polymer component is the combination of Component A, B and/or C or whether the polymer component is a completely separate component from the mixture of Component A, B and/or C. For the purpose of this office action, the claim has been interpreted as "a polymer component comprising of Component A, Component B and/or Component C". Appropriate correction is required.

2. **Claim 23** is objected to because of the following informalities: the word "any" in line 1 of said claim should be deleted. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-4, 6-12 and 14-15** are rejected under 35 U.S.C. 102(b) as being anticipated by **Kelsey (US 6,093,786)**.

**Regarding claim 1 and 4**, Kelsey teaches a polytrimethylene terephthalate (Abstract) composition comprising a polymer component (C1/L19) together with a combination of Component A and Component B, and/or Component C, from 10 to 100% by mole of said polymer component being polytrimethylene terephthalate composed of

trimethylene terephthalate repeating units (C2/L39-49 and C3/L54-60), wherein: said Component A is a compound having a phenolic hydroxy group (a) represented by formula (1) (C2/L54-C3/L4), said Component B is a compound having a secondary amine structure (b) represented by formula (2) (C3/L50-52, Irganox 1098), and said Component C is a compound having both of the group (a) and the group (b) in a molecule and/or a modified derivative thereof (C3/L50-52, Irganox 1098).

**Regarding claim 2,** Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that the total amount of the secondary amine structure contained in Components B and C is from 0.0001 to 1.0 milliequivalent per mole of trimethylene terephthalate repeating units (C3/L53-60) and the combined content of Components B and C is from 0.0001 to 0.2% by weight relative to the entire composition (C8/Table 1).

**Regarding claim 3 and 15,** Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that each of the compounds of Components A, B and C is a stabilizer (C2/L18-28).

**Regarding claim 6,** Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that Component C is at least one selected from the group consisting of **N,N- hexane-1,6-diylbis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionamide]** (C3/L52, Irganox 1098), 2,6-di-tert-butyl-4-(4,6-bis(octylthio)-1,3,5-triazin-2-ylamino)phenol and modified derivatives thereof.

**Regarding claim 7,** Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that the composition further comprises a compound containing

a sulfur atom (C5/L19-20) and/or a modified derivative thereof, wherein said sulfur atom ranges from 0.001 to 1.0 millimole per mole of trimethylene terephthalate repeating units (C5/L34-40).

**Regarding claim 8,** Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that the compound containing a sulfur atom comprises a compound having a thioether group (C5/L19) and/or a modified derivative thereof.

**Regarding claim 9,** Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that 10-80% by mole of the polymer component in the composition is composed of trimethylene terephthalate repeating units (C8/Table 1).

**Regarding claim 10,** Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that 10 to 80% by mole of the polymer component in the composition is trimethylene terephthalate composed of trimethylene terephthalate repeating units and from 90 to 20% by mole of the polymer component is composed of repeating units of at least one resin selected from the group consisting of a polyester, a polycarbonate and a polyolefin, other than polytrimethylene terephthalate (C2/L38-53).

**Regarding claim 11,** Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that 90 to 20% by mole of the composition is at least one polymer selected from the group consisting of polyethylene terephthalate, **polybutylene terephthalate** (C2/L38-53), polyethylene naphthalate, a polycarbonate and a copolymer thereof mainly comprising the same.

**Regarding claim 12,** Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches a process for producing the polytrimethylene terephthalate

composition comprising adding a combination of Component A and Component B and/or Component C, either directly or as a solution or a dispersion in a glycol mainly composed of trimethylene glycol, at any time point during the polymerization to the complete cooling of the product after the completion of the reaction (C5/L6-C6/L14).

**Regarding claim 14**, Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that the composition can be made into a fiber or a molded article (C6/L20-22).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kelsey US (6,093,786)**, as applied to claim 1 above, in view of **Iohara et al (US 4,410,473)**.

**Regarding claim 13**, Kelsey discloses all the limitations as set forth above. In addition Kelsey teaches that the Components can be added during any point in the polymerization process (C5/L60-62).

However, Kelsey does not explicitly teach a kneading step in the manufacturing process.

Iohara teaches a composition made from polytrimethylene terephthalate (Abstract) which uses a kneading step to enhance the blending of the additives (C5/L12-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the kneading step of Iohara in the process of Kelsey. One would have been motivated to do so in order to receive the expected benefit of enhancing the blending of the components (Iohara, C5/K12-24). They are combinable because they are concerned with the same field of endeavor, namely, polytrimethylene terephthalate compositions. Absent objective evidence to the contrary and based upon the teachings of the prior art, there would have been a reasonable expectation of success.

**8. Claims 5, 16-23 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kelsey US (6,093,786)**, as applied to claim 1 above, in view of **Takenouchi et al (US 5,273,852)** and **Gross et al (US 6,569, 958)**.

**Regarding claim 5 and 16**, Kelsey discloses all the limitations as set forth above. Kelsey discloses that Component B can be Irganox 1098. However, Kelsey does not teach that Component B is at least one selected from the group consisting of a

reaction product of N-phenylbenzenamine with 2,4,4-trimethylpentene, 3-(N-salicyloyl)amino- 1,2,4-triazole, decamethylene carboxylic acid disalicyloyl hydrazide and modified derivatives thereof.

Takenouchi teaches that either Irganox 1089 as well as Irganox 5057 (C20/L43-46) can be used in a polyester composition (C20/L18) to prevent the deterioration in polymer properties caused by light, heat or chemical substances (C20/L38-42).

Gross teaches that Irganox 5057 is a hindered amine stabilizer described as benzenamine, n-phenyl-, reaction products with 2,4,4-trimethylpentene (C16/L38-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Irganox 5057 of Takenouchi in the composition of Kelsey because it would amount to nothing more than a use of a known stabilizer for its intended use in a known environment to accomplish entirely expected result.

**Regarding claim 17**, modified Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that Component C is at least one selected from the group consisting of **N,N- hexane-1,6-diylbis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionamide]** (C3/L52, Irganox 1098), 2,6-di-tert-butyl-4-(4,6-bis(octylthio)-1,3,5-triazin-2-ylamino)phenol and modified derivatives thereof.

**Regarding claim 18**, modified Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that the composition further comprises a compound containing a sulfur atom (C5/L19-20) and/or a modified derivative thereof, wherein said sulfur atom ranges from 0.001 to 1.0 millimole per mole of trimethylene terephthalate repeating units (C5/L34-40).

**Regarding claim 19**, modified Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that the compound containing a sulfur atom comprises a compound having a thioether group (C5/L19) and/or a modified derivative thereof.

**Regarding claim 20**, modified Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that 10-80% by mole of the polymer component in the composition is composed of trimethylene terephthalate repeating units (C8/Table 1).

**Regarding claim 21**, modified Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that 10 to 80% by mole of the polymer component in the composition is trimethylene terephthalate composed of trimethylene terephthalate repeating units and from 90 to 20% by mole of the polymer component is composed of repeating units of at least one resin selected from the group consisting of a polyester, a polycarbonate and a polyolefin, other than polytrimethylene terephthalate (C2/L38-53).

**Regarding claim 22**, modified Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that 90 to 20% by mole of the composition is at least one polymer selected from the group consisting of polyethylene terephthalate, **polybutylene terephthalate** (C2/L38-53), polyethylene naphthalate, a polycarbonate and a copolymer thereof mainly comprising the same.

**Regarding claim 23**, modified Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches a process for producing the polytrimethylene terephthalate composition comprising adding a combination of Component A and Component B and/or Component C, either directly or as a solution or a dispersion in a

glycol mainly composed of trimethylene glycol, at any time point during the polymerization to the complete cooling of the product after the completion of the reaction (C5/L6-C6/L14).

**Regarding claim 25**, modified Kelsey discloses all the limitations as set forth above. In addition, Kelsey teaches that the composition can be made into a fiber or a molded article (C6/L20-22),

9. **Claim 24** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kelsey US (6,093,786)** in view of **Takenouchi et al (US 5,273,852)** and **Gross et al (US 6,569,958)** as applied to claim 22 in view of **Iohara et al (US 4,410,473)**.

**Regarding claim 24**, modified Kelsey discloses all the limitations as set forth above. In addition Kelsey teaches that the Components can be added during any point in the polymerization process (C5/L60-62).

However, Kelsey does not explicitly teach a kneading step in the manufacturing process.

Iohara teaches a composition made from polytrimethylene terephthalate (Abstract) which uses a kneading step to enhance the blending of the additives (C5/L12-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the kneading step of Iohara in the process of Kelsey. One would have been motivated to do so in order to receive the expected benefit of enhancing the blending of the components (Iohara, C5/K12-24). They are combinable because they are concerned with the same field of endeavor, namely, polytrimethylene

terephthalate compositions. Absent objective evidence to the contrary and based upon the teachings of the prior art, there would have been a reasonable expectation of success.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Doris L. Lee whose telephone number is (571)270-3872. The examiner can normally be reached on Mon - Thurs, 7:30am - 5pm EST and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DLL 4/22/2008

/Basia Ridley/  
Supervisory Patent Examiner, Art Unit 4145